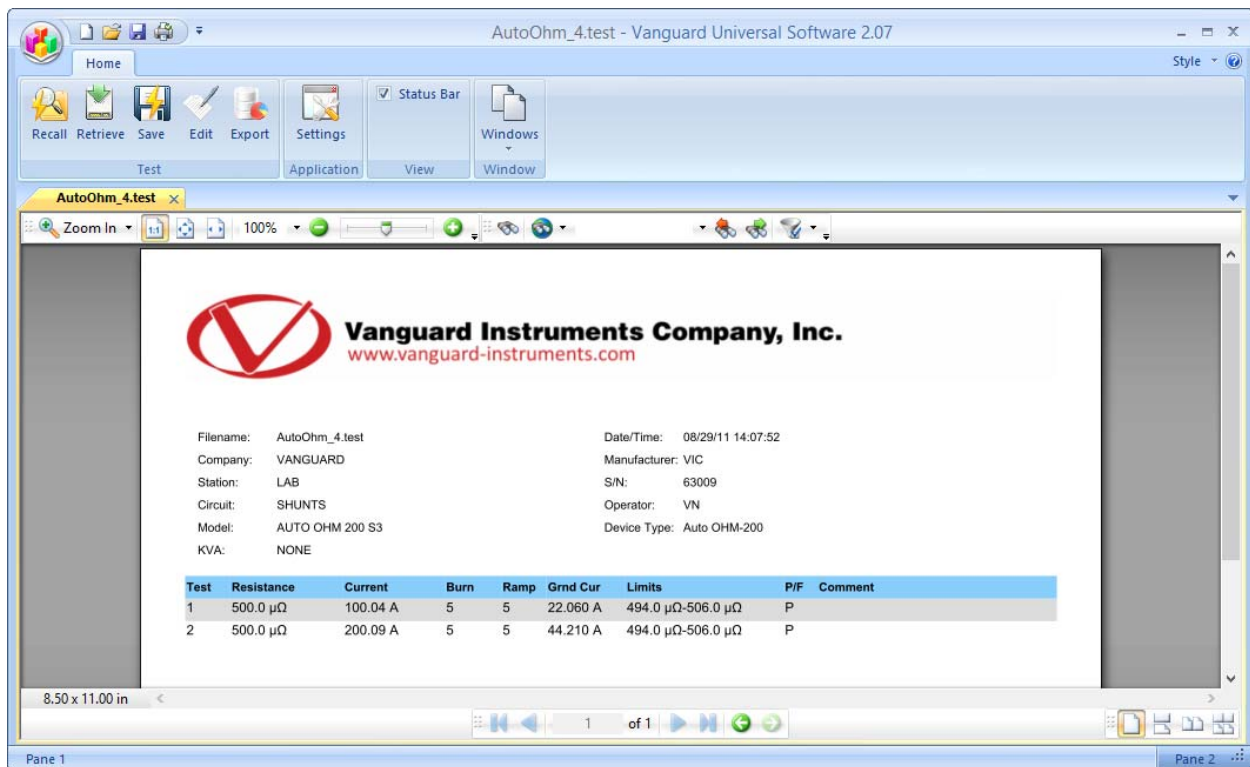


Vanguard Universal Software (VUS)

VERSION 2.x SOFTWARE MANUAL

For Use with Vanguard's
Auto-Ohm 200 S3, DMOM-200 S3, DMOM-600,
CT-3500 S2, and VBT-80P
Sub-Station Testing Instruments



The screenshot displays the Vanguard Universal Software 2.07 interface. The window title is "AutoOhm_4.test - Vanguard Universal Software 2.07". The interface includes a menu bar with options like Home, Recall, Retrieve, Save, Edit, Export, Settings, Application, View, and Window. Below the menu bar is a toolbar with icons for Zoom In, 100%, and other navigation functions. The main content area shows the Vanguard Instruments Company, Inc. logo and website address (www.vanguard-instruments.com). Below this, there is a metadata section with the following information:

Filename:	AutoOhm_4.test	Date/Time:	08/29/11 14:07:52
Company:	VANGUARD	Manufacturer:	VIC
Station:	LAB	S/N:	63009
Circuit:	SHUNTS	Operator:	VN
Model:	AUTO OHM 200 S3	Device Type:	Auto OHM-200
KVA:	NONE		

Below the metadata is a table with test results:

Test	Resistance	Current	Burn	Ramp	Grnd Cur	Limits	P/F	Comment
1	500.0 $\mu\Omega$	100.04 A	5	5	22.060 A	494.0 $\mu\Omega$ -506.0 $\mu\Omega$	P	
2	500.0 $\mu\Omega$	200.09 A	5	5	44.210 A	494.0 $\mu\Omega$ -506.0 $\mu\Omega$	P	

The interface also shows a status bar at the bottom with "8.50 x 11.00 in" and "1 of 1" pages.



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November 2013
Revision 1

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CONVENTIONS USED IN THIS DOCUMENT

This document uses the following conventions:

- Microsoft® Windows XP, Vista, 7, and 8 will be simply referred to as Windows in this manual
- Menu names are referred to as ***Menu Name***
- Menu items are referred to as *Menu Item*
- Dialog boxes and their elements (buttons, options, etc.) are referred to as “Dialog Box Element”
- PC keyboard keys are referred to as **[Key]**. Key combinations are shown as **[Key]+[Key]**.
- File locations, directories, and filenames are shown as “C:\folder\filename”
- Warning messages are indicated as:



Warning message

WARNING

- Important notes are indicated as:



Note details

NOTE

Microsoft, Windows, Windows XP, and Windows Vista are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. All other trademarks are the property of their respective owners.

1.0 INTRODUCTION

The Vanguard Universal Software (VUS) is a Windows-based PC software application for use with Vanguard's Auto-Ohm 200 S3, DMOM-200 S3, DMOM-600, CT-3500 S2, and VBT-80P sub-station testing instruments. VUS can be used to retrieve test records from these units for further analysis or archival on a PC. It can also be used to export test results in XML, PDF, and Excel formats.

1.1 System Requirements

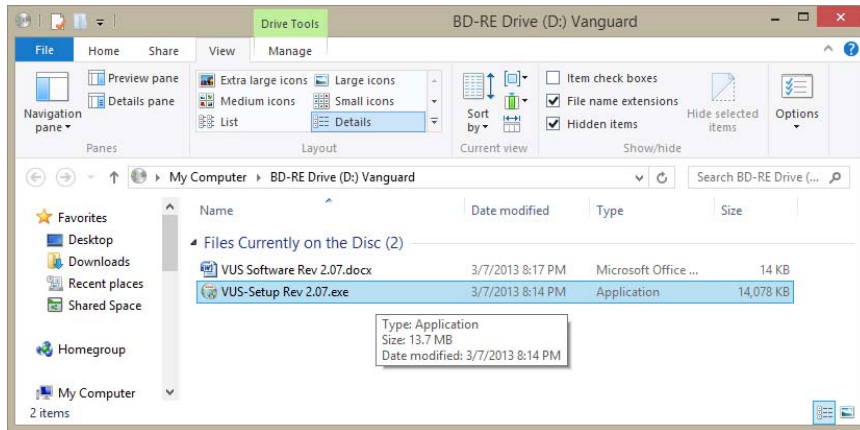
VUS has the following minimum system requirements:

- PC running Microsoft® Windows® XP or newer
- 2 Megabytes of hard drive space
- CD-ROM or DVD-ROM drive
- RS-232C (serial) port or USB port (depending on Vanguard unit being used)

2.0 SOFTWARE INSTALLATION

Follow the steps below to install the VUS on your PC.

1. Insert the installation CD in the PC's CD or DVD drive and open the CD or DVD drive in Windows Explorer. The contents of the CD will be listed as shown below:



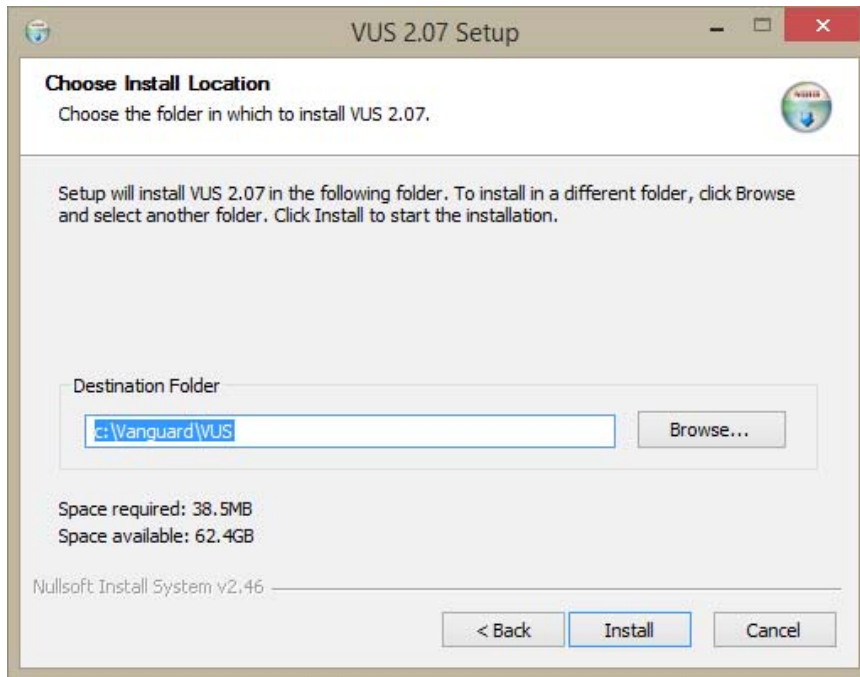
Double click (or single click in some Windows configurations) on the “*VUS Setup Rev 2.x.exe*” file to start the installation process.

2. The VUS Setup Wizard will appear as shown below:



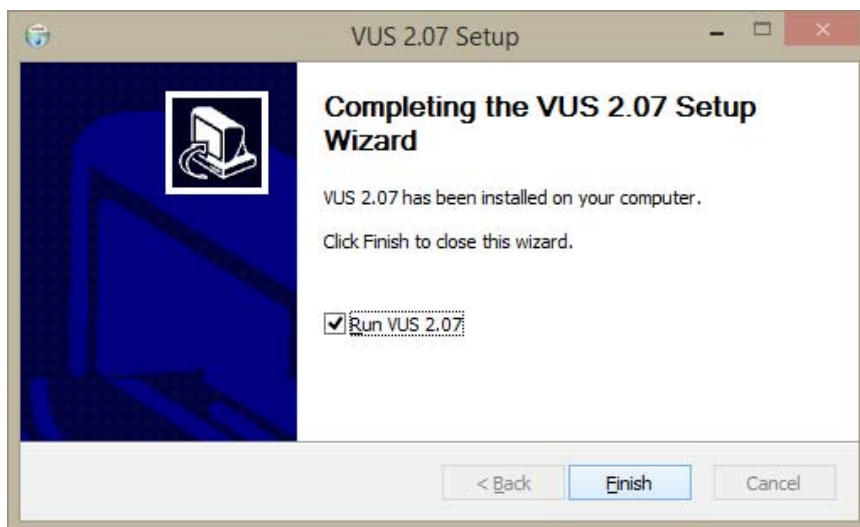
Click on the "Next" button to continue.

- The following screen will be displayed showing the location on your hard drive where the software will be installed (C:\Vanguard\VUS):



You may choose a different installation location by clicking on the "Browse..." button and then browsing to the location on your hard drive where you would like to install the software. If you would like to install the software in the default location, click on the "Install" button to continue.

- The installation process will start and the screen will update as files are copied and installed on your computer. The following screen will be displayed when the installation is complete:



If you would like to run the application now, make sure the "Run VUS 2.x" checkbox is checked. Click on the "Finish" button.

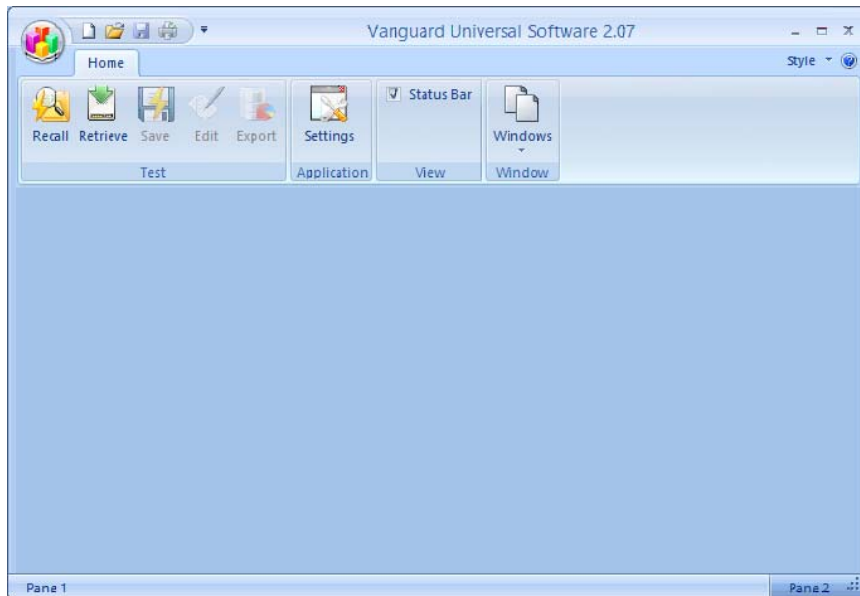
**NOTES**

- The installation program will create a “*Tests*” sub-folder in the main installation folder. By default all test records will be stored in this folder.
- You can later change the default test record storage locations. Please see section 3.2.2 for details.

3.0 STARTING AND CONFIGURING THE VUS APPLICATION

Windows XP, Vista, or 7:

1. Click on the Windows "Start" menu button to open the *Start Menu*.
2. Click on the *All Programs* menu item.
3. Click on the *Vanguard* menu item.
4. Click on the *VUS* menu item. The VUS main application window will appear as shown below:

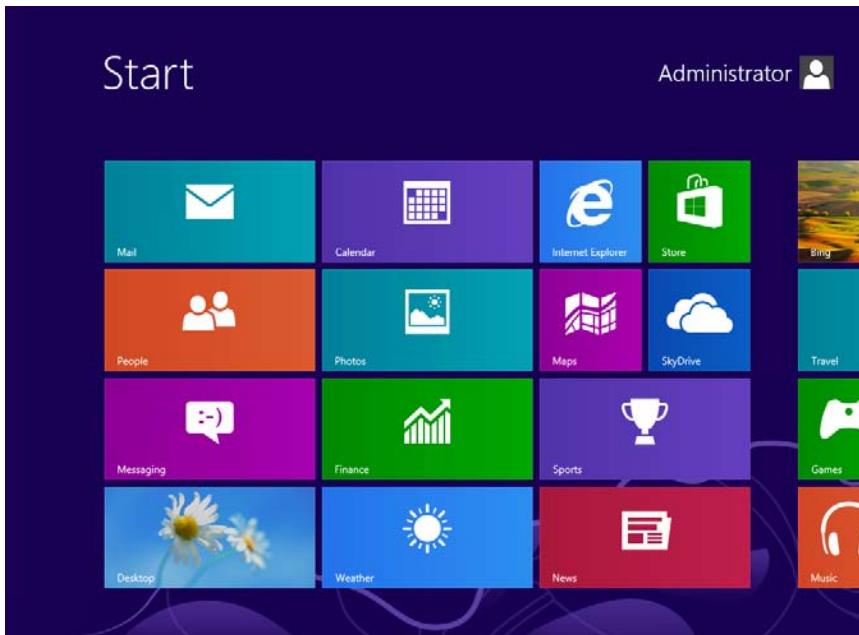


Windows 8:

By default, the VUS application does NOT create an icon in your "Start" screen. Follow the steps below to add the icon to the "Start" screen and then launch the application:

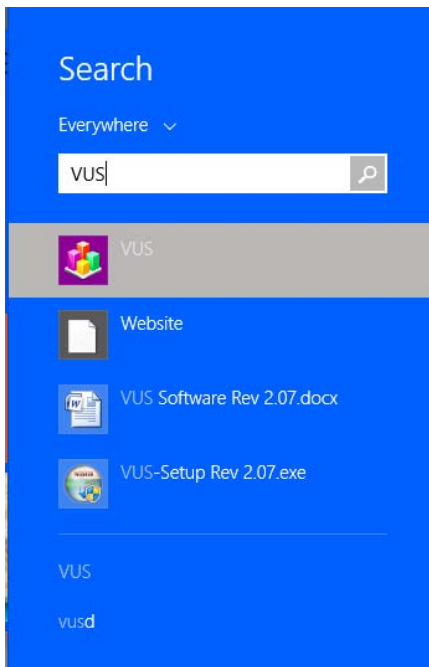
1. Press the **[Windows]** button on your keyboard or click on the "Windows Start" icon (Windows 8.1 and above) on the bottom left corner of your screen.

- The "Start" screen will be displayed (icons will vary depending on what applications you have installed on your computer):



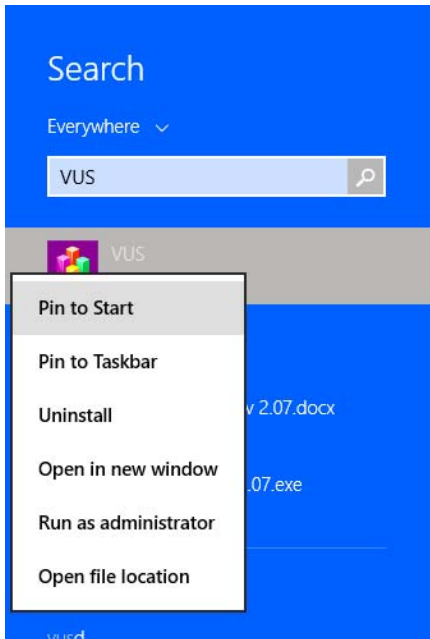
Using your keyboard, type "VUS" to start searching for the application.

- The "Search" sidebar will be displayed on the right side of the screen and will display the VUS application icon as part of the search results:



Right click on the "VUS" icon.

4. The following menu will be displayed:

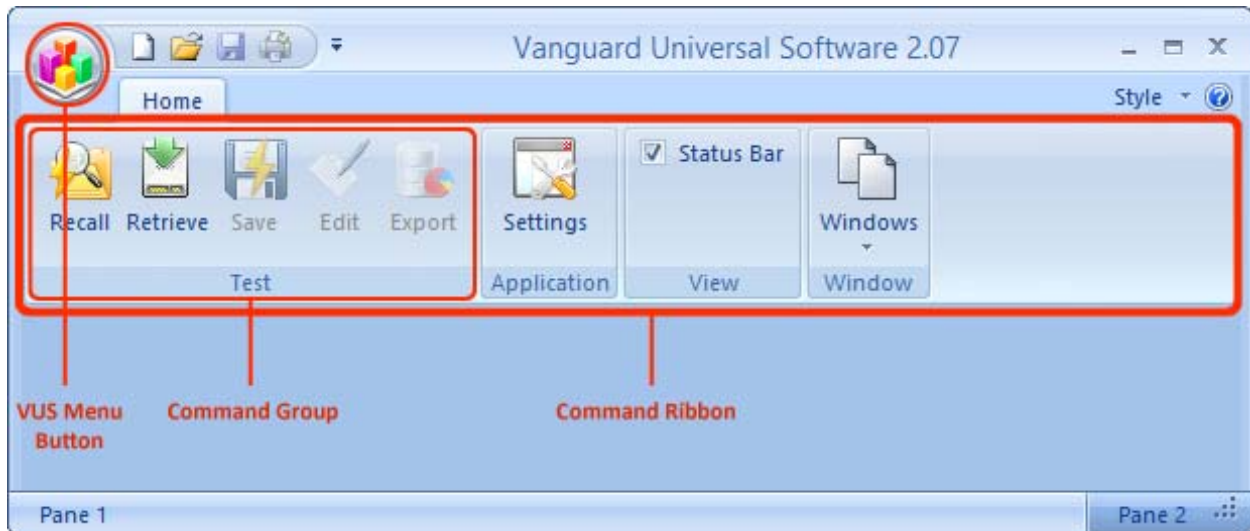


Click on "Pin to Start" and now the VUS application icon will be added to the Windows "Start" screen. You can re-arrange the icon to your liking on the "Start" screen.

5. Click on the VUS icon from the "Start" screen to launch the app. You do not need to repeat steps 2 to 4 the next time you launch the app.

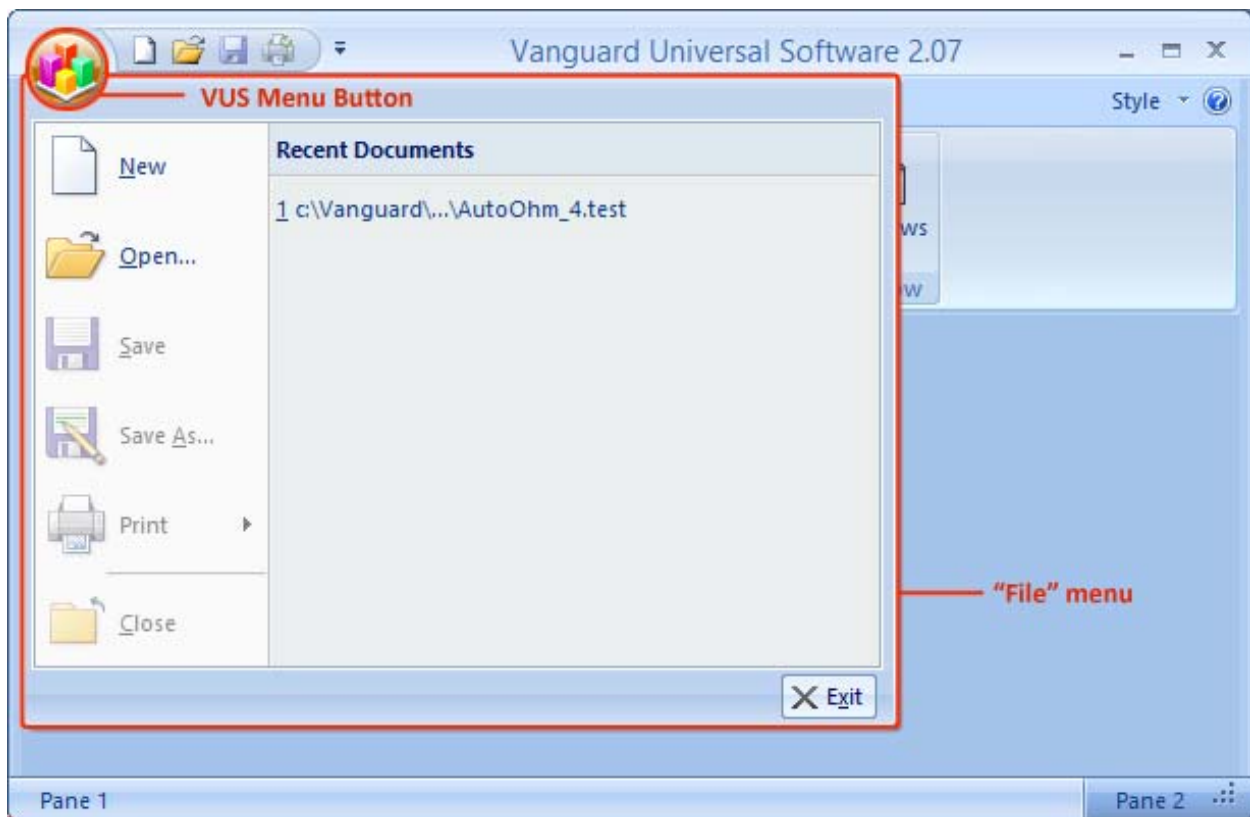
3.1 The VUS Application Workspace

Older versions of the VUS application used a menu bar and drop-down menus. The latest version as of this writing (2.07) uses a command ribbon as shown below:



Related commands are grouped together in the command ribbon.

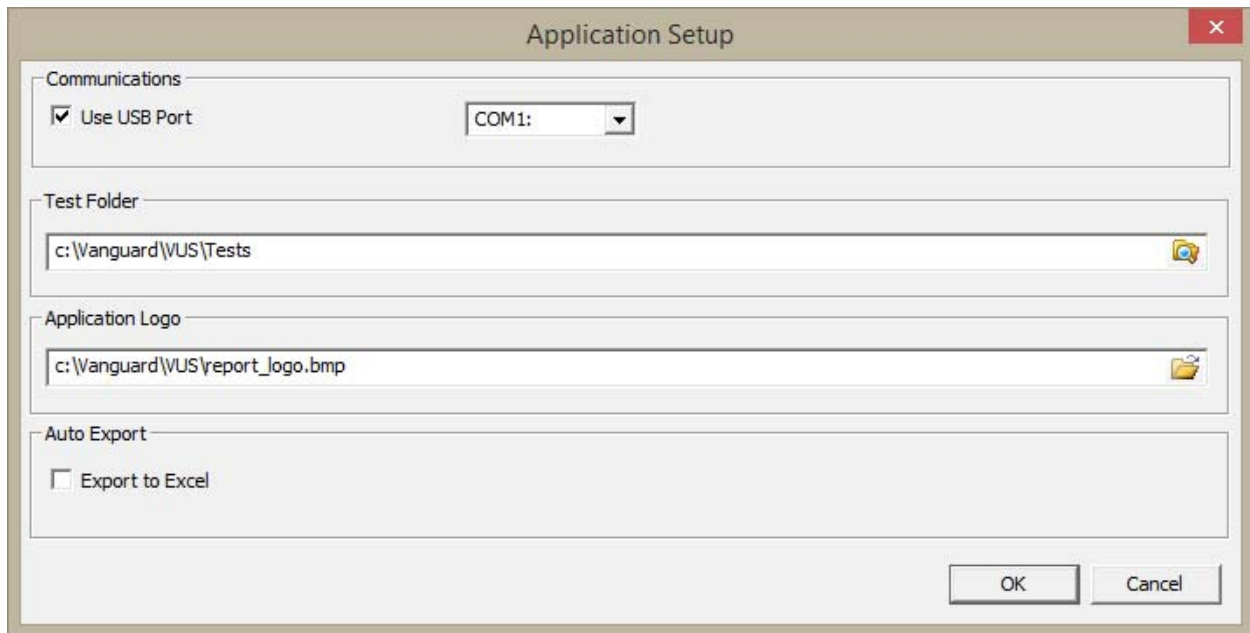
The "File" menu from previous versions has been replaced with the VUS Menu Button. Click on this button to view the "File" menu options:



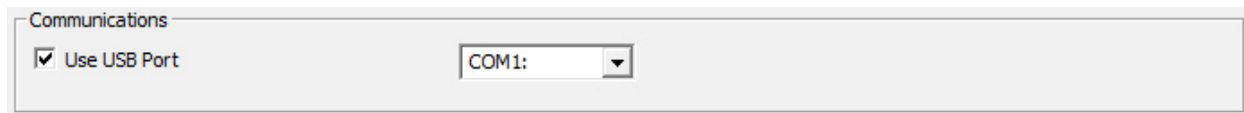
3.2 Configuring Default Application Settings

The VUS application's default settings should be configured before attempting to use it for the first time. Follow the steps in this section to configure the communication parameters, default location for test records, the location for a logo image to use on reports, and export preferences.

To access the application settings, click on the **Settings** icon in the **Application** command group on the command ribbon. The following window will be displayed:



3.2.1. Configuring the Communication Parameters



Follow the steps below to configure the VUS application so that it can properly communicate with the connected Vanguard unit:

1. If the Vanguard unit is connected via RS-232C, click on the drop-down menu under the "Communications" section and select the COM: port that the unit is connected to. Make sure the "Use USB Port" checkbox is UN-CHECKED.

If the Vanguard unit is connected via USB, check the "Use USB Port" checkbox, if not already checked, to enable the USB interface. Click on the "OK" button to save your settings.



NOTE

The Vanguard CT-3500 S2 features a USB PC interface, but it actually uses an internal USB to RS-232C adapter. If using the CT-3500 S2, make sure to UN-CHECK the "Use USB Port" checkbox and select the correct COM port from the drop-down menu. See the CT-3500 S2 User's Manual for additional information.

2. Connect the Vanguard unit to the PC via the RS-232C or USB port and turn on the power. VUS will automatically connect to the unit.

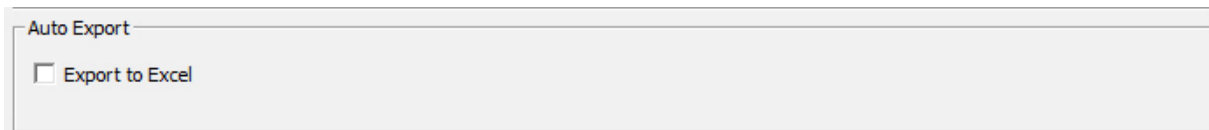
3.2.2. Configuring Default Folders and File Locations



The screenshot shows two configuration fields. The first, labeled 'Test Folder', contains the text 'c:\Vanguard\VUS\Tests' and a folder icon on the right. The second, labeled 'Application Logo', contains the text 'c:\Vanguard\VUS\report_logo.bmp' and a folder icon on the right.

1. The "Test Folder" input field shows the current default folder where test shots are stored. You can change this location by clicking on the folder icon to the right and then selecting the folder on your computer that you would like to use as the storage location for test shots.
2. The VUS application can display a custom logo image at the top of reports. The "Application Logo" input field shows the name and location of the default logo image file. You can select a different logo images file by clicking on the folder icon on the right and then locating the logo image file that you would like to use.

3.2.3. Configuring Default Report Export Settings



The screenshot shows a configuration box titled 'Auto Export' with a single checkbox labeled 'Export to Excel' which is currently unchecked.

When a test record is loaded in VUS, it is automatically exported in XML and PDF formats. If you would like the test record to be automatically exported in Excel format as well, check the "Export to Excel" checkbox.

The exported test records are stored in sub-folders in the "Tests" folder. Assuming you have installed VUS in the default location, the PDF, XML, and Excel files will be located at "C:\Vanguard\VUS\Tests\Pdf", "C:\Vanguard\VUS\Tests\Xml", and "C:\Vanguard\VUS\Tests\Excel", respectively.

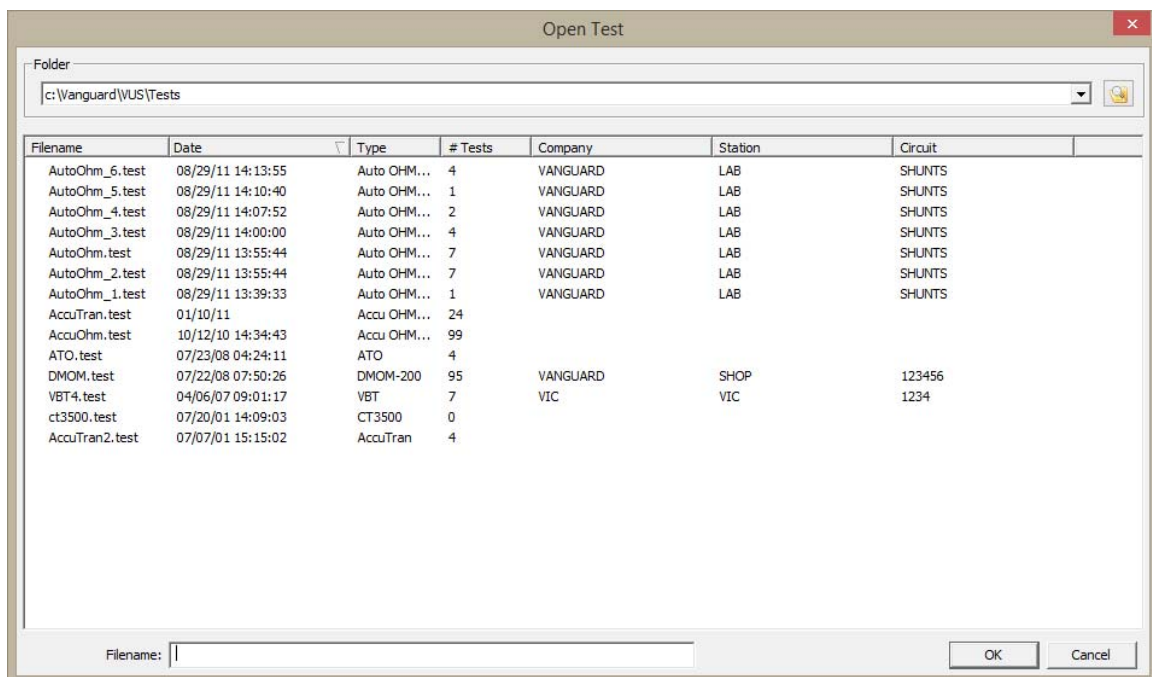
4.0 WORKING WITH TEST RECORDS

VUS can be used to retrieve test records from a connected Vanguard unit or from a storage location on your computer. Once a test record is retrieved, you can change the record header information, print the test record, export it in PDF, XML, and Excel formats, and save the record to a storage location on your computer.

4.1 Retrieving Test Records From Your Computer

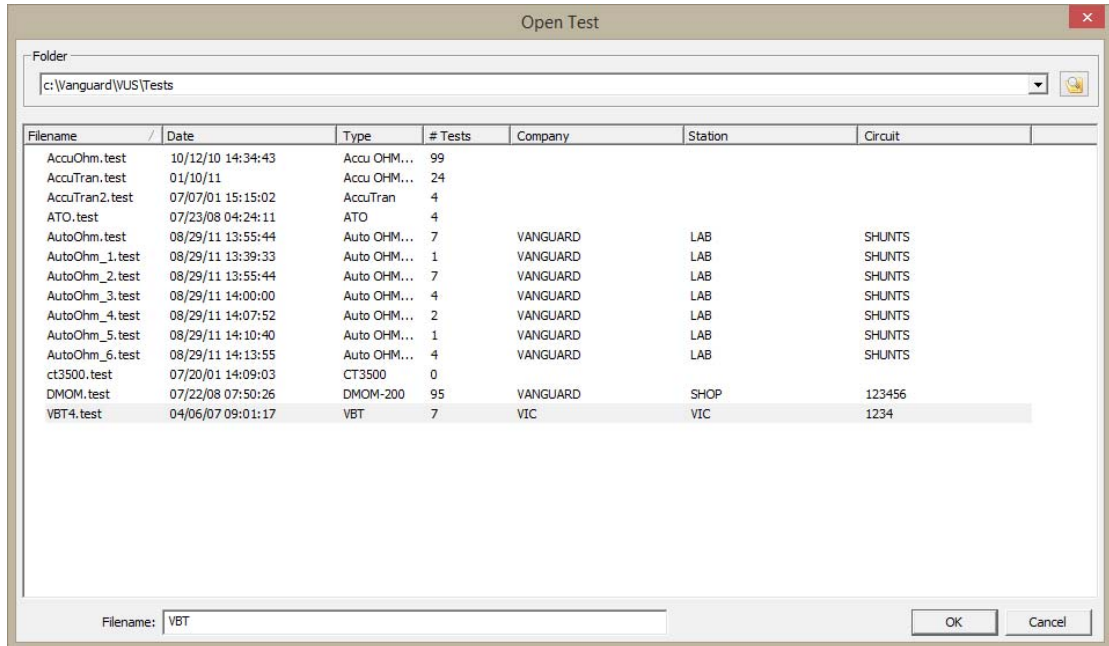
Use the steps below to retrieve a test record from your computer:

1. Click on the **Recall** icon in the **Test** command group in the **Command Ribbon**. The following screen will be displayed listing the test records from the default test record folder:



- The top left section of the window displays the name of the directory where the test records are being retrieved from. If you wish to retrieve records from a different directory, click on the folder icon at the top right of the window and browse to the folder containing your test records.
- You can sort the records by any of the column headers (for example Filename, Date, etc.). To change the sort order, click on the column header label that you would like to sort by. For example, if you would like the records to be sorted by Filename, click on the Filename column heading. You can reverse the sort order by clicking on the header a second time.

- You can also search for a particular filename. You can start typing in the "Filename" input field and it will actively highlight the first matching filename. For example, in the listing below, typing VBT in the "Filename" field will highlight the "VBT4.test" filename as shown below:

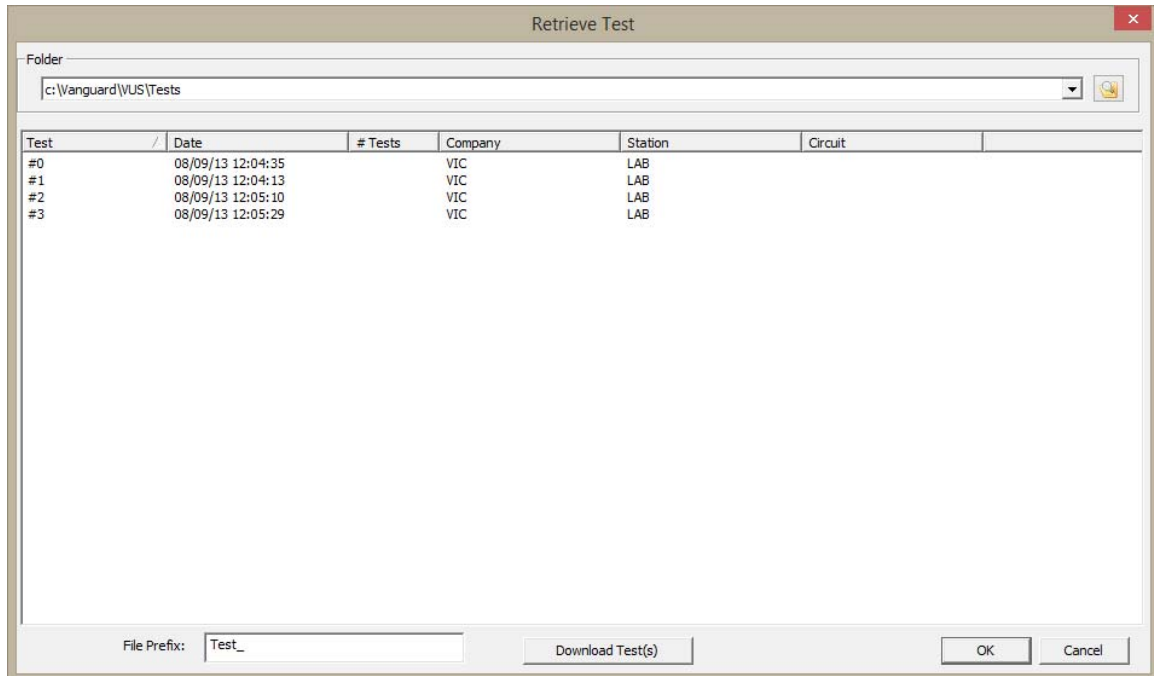


- Click on the file name you would like to open and click the "OK" button. The test record will be loaded and the tabulated test results will be displayed.

4.2 Retrieving Test Records from a Connected Unit

Follow the steps below to retrieve one or more test records from a connected Vanguard unit:

1. Make sure the VUS application is running. Connect the unit to the PC via either the RS-232C or USB port and turn on the power.
2. Click on the **Retrieve** icon in the **Test** command group in the **Command Ribbon**.
3. The following window will be displayed listing a directory of all the test records stored in the unit's internal memory:



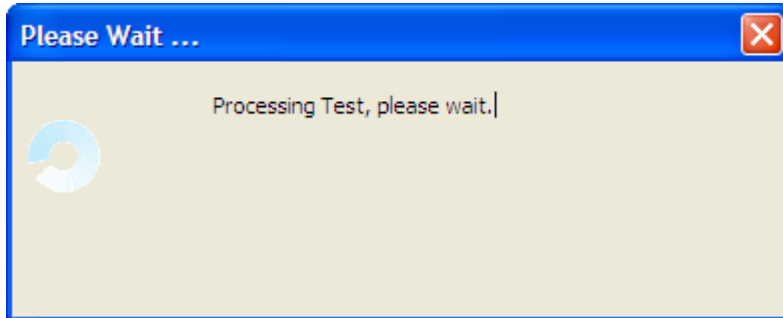
4. You can select a shot to be retrieved by clicking on the shot number. The selected record will be highlighted. You may select multiple records by holding down the **[CTRL]** key and clicking on the shot numbers. All selected records will be highlighted. You may de-select a selected record by holding down the **[CTRL]** key and clicking on the selected shot number a second time.

The "File Prefix" input field allows you to enter a word that will be used as a prefix for the file name for the stored record on the PC hard drive. When a test record is retrieved from the unit and stored on the hard drive, the file name is in the "*n.test*" format, where "*n*" is the record number. So if you would like the file name to be "*Test_n.test*", enter the word "Test_" in the "File Prefix" input field.

5. Click on the "Download Test(s)" button to retrieve the selected test records from the connected unit and store them in the default test record folder. Click on the "OK" button when done retrieving the desired test records.

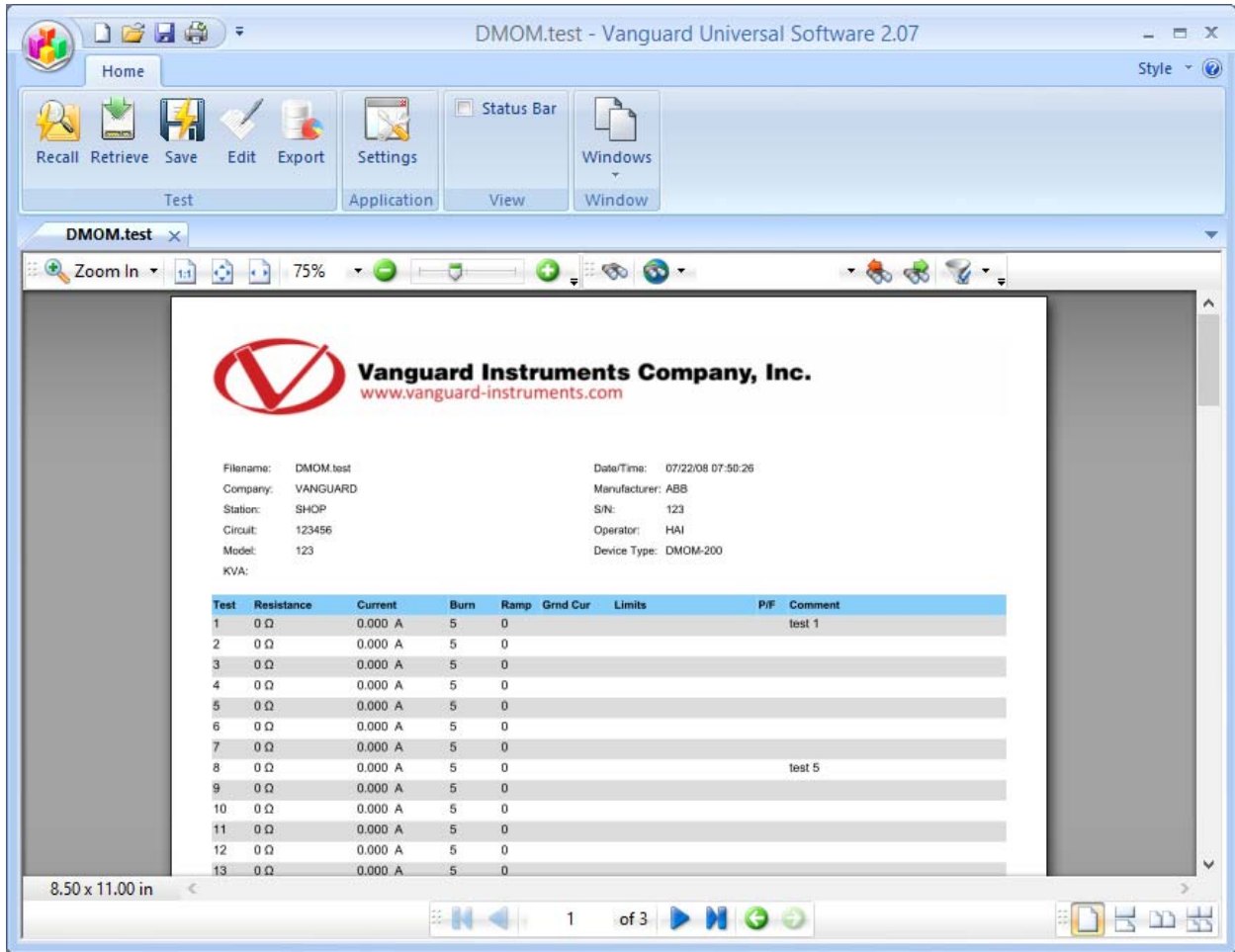
4.3 Viewing and Analyzing Test Records

Whenever a test record is loaded from the PC, the VUS application will automatically export the test record in PDF, XML, and Excel (if the option is checked in Application Settings. See section 3.2.3) formats. When loading a file from the PC, the following window will be displayed while the export function is being performed:



The exported PDF, Excel, and XML files are stored in sub-folders named "Excel", "Pdf", and "Xml", respectively, within the folder where the original test record is stored. For example, if the original test record is stored in the folder "*C:\Vanguard\VUS\Tests*", the exported PDF file will be stored in the folder "*C:\Vanguard\VUS\Tests\Pdf*".

Once the test record is loaded and exported in the preferred formats, it will be displayed in the VUS application as shown below:

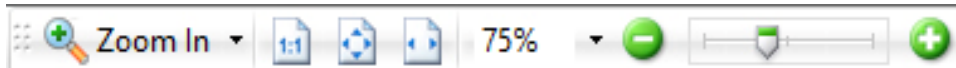


4.3.1. Page Navigation Options

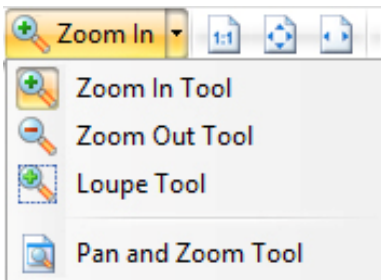


- To navigate to another page of the report, click on the blue left or right arrow for the previous or next page, respectively.
- The bottom right corner of the window provides options for viewing multiple pages. From left to right, the icons perform the following functions:
 - Display a single page at a time
 - Display pages continually, one page at a time. With this option you can drag the report up with the mouse to view the next page below it.
 - Display two pages of the report at a time, side by side
 - Display two pages of the report at a time side by side and also allow continuous scrolling.

4.3.2. Panning and Zooming Options



- You can quickly zoom in and out of the document by clicking on the green "+" and "-" buttons, respectively. You can also drag the slider between the two buttons to zoom in and out.
- You can select a particular zoom percentage value by clicking on the drop-down menu to the left of the zoom buttons.
- You can view the document at actual size by clicking on the "1:1" page icon. You can view the entire page by clicking on the page icon with four arrows. You can make the document fit the width of the window by clicking on the page icon with two arrows.
- You can select a different zoom tool from the drop-down menu to the left of the page icons. Following is a description of the tools:



- Zoom In Tool

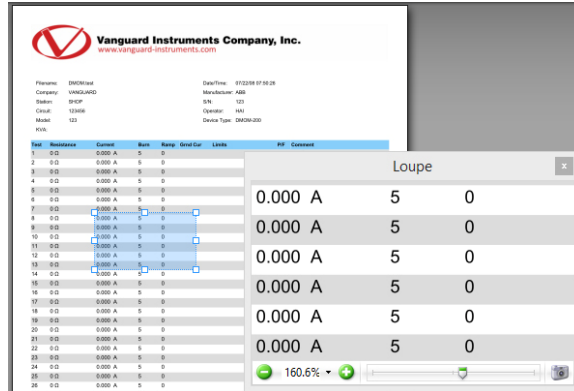
This tool is used to zoom into (magnify) the document. Clicking anywhere on the document will zoom in on the area incrementally.

- Zoom Out Tool

This tool is used to zoom out of the document. Clicking anywhere on a zoomed in page will zoom out incrementally.

- Loupe Tool

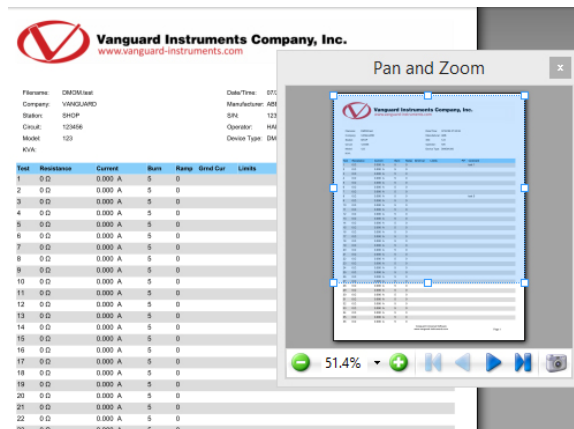
The loupe tool works like a magnifying glass by showing the entire document and also showing a magnification of a selected area of the document as shown below:



After selecting the tool, click on the area that you would like to magnify. A blue rectangle will be displayed highlighting the area that is being magnified. You can drag the rectangle around the document to magnify other areas. You can also adjust the size of the rectangle by dragging any of the control points (white squares).

- Pan and Zoom Tool

The Pan and Zoom Tool can be used in conjunction with the other tools. It will display a new window with a thumbnail of the document as shown below:



The blue rectangle represents the area of the document being displayed in the main window. You can drag the blue rectangle and adjust its size to zoom in on a particular section of the test report.

4.3.3. Search Options



You can search through the test report by using the tools on the search bar. Type the keyword you are looking for in the search text entry area and press the **[ENTER]** key. The first instance of the text will be highlighted in the document as shown below:

Vanguard Instruments Company, Inc.
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Filename: DMOM.test Date/Time: 07/22/08 07:50:26
 Company: VANGUARD Manufacturer: ABB
 Station: SHOP S/N: 123
 Circuit: 123456 Operator: HAI
 Model: 123 Device Type: DMOM-200
 KVA:

Test	Resistance	Current	Burn	Ramp	Grnd Cur	Limits	P/F	Comment
1	0 Ω	0.000 A	5	0				test 1

Click on the binoculars with the green arrow to search for the next instance of the text.

Click on the binoculars with the red arrow to search for the previous instance of the text.

4.3.4. Editing the Record Header Information

You can edit the test record's header information as well as the comments for each test by clicking on the **Edit** icon in the **Test** command group in the **Command Ribbon**. The following screen will be displayed:

Test	Comment
1	test 1
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Make any changes to the test record header information as necessary (such as the Company name, Station Name, etc.). You can also add comments for each test listed by clicking in the comment section to the right of the test number and typing your comments. Click on the "OK" button when done.

4.3.5. Saving Test Records

Click on the **Save** icon in the **Test** command group in the **Command Ribbon** to save any changes made to the test record.

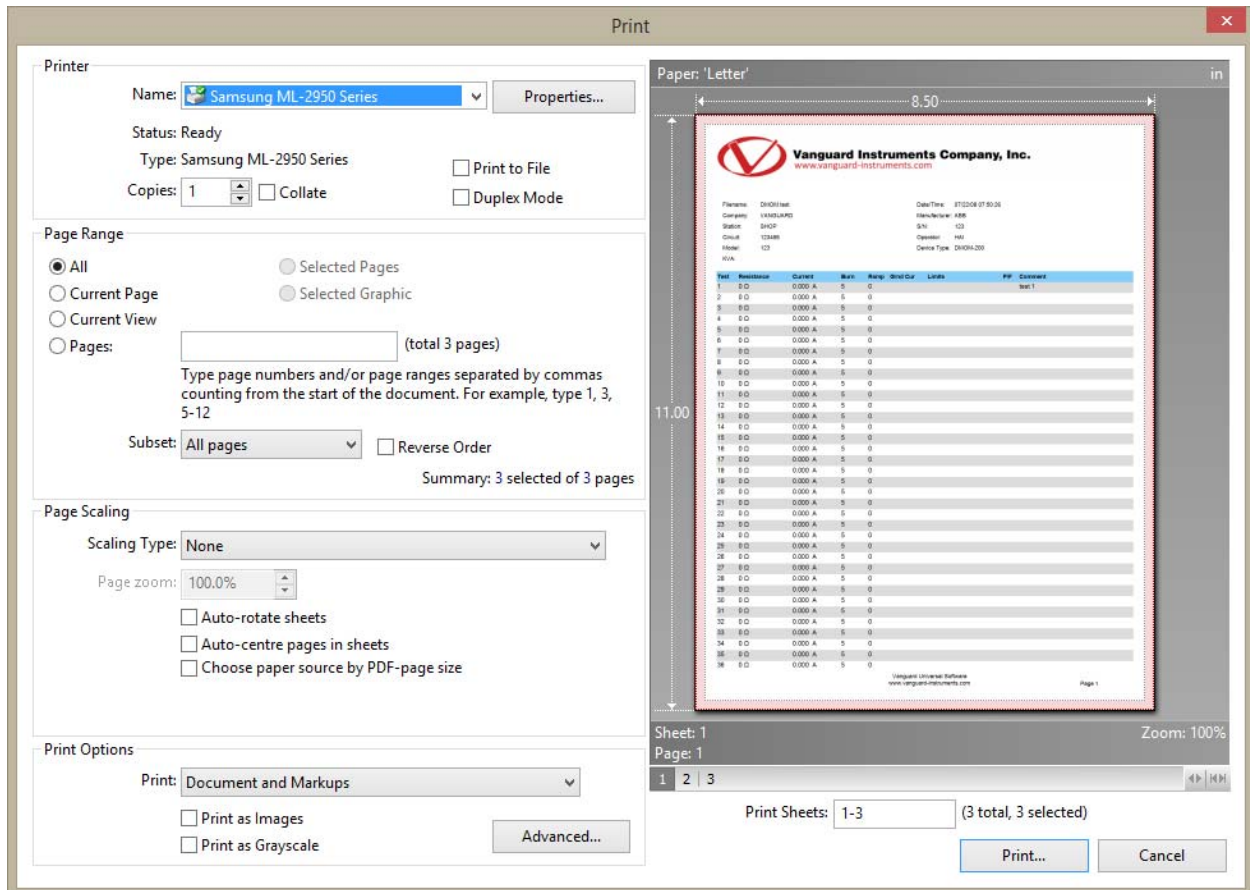
If you would like to save the test record as a different file name, click on the **VUS Menu Button** and then select **Save As...** from the drop-down menu. Navigate to the folder where you would like to save the file, type the file name for the new file, and then click on the "Save" button.

4.3.6. Exporting Test Records

Whenever a test record is loaded in VUS, the application automatically exports it to PDF, XML, and Excel formats (see section 4.3). You can also manually export the test record by clicking on the **Export** icon in the **Test** command group in the **Command Ribbon**.

4.3.7. Printing Test Records

To print the test record to a connected printer, click on the **VUS Menu Button** and then click on the **Print** option. The "Print" window will be displayed as shown below:



Select the printer you would like to print to and any relevant options and then click on the "Print..." button. The test report will be printed on the selected printer. A sample test report printout is shown on the next page.



Vanguard Instruments Company, Inc.
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Filename: DMOM.test
 Company: VANGUARD
 Station: SHOP
 Circuit: 123456
 Model: 123
 KVA:

Date/Time: 07/22/08 07:50:26
 Manufacturer: ABB
 S/N: 123
 Operator: HAI
 Device Type: DMOM-200

Test	Resistance	Current	Burn	Ramp	Grnd Cur	Limits	P/F	Comment
1	0 Ω	0.000 A	5	0				test 1
2	0 Ω	0.000 A	5	0				
3	0 Ω	0.000 A	5	0				
4	0 Ω	0.000 A	5	0				
5	0 Ω	0.000 A	5	0				
6	0 Ω	0.000 A	5	0				
7	0 Ω	0.000 A	5	0				
8	0 Ω	0.000 A	5	0				test 5
9	0 Ω	0.000 A	5	0				
10	0 Ω	0.000 A	5	0				
11	0 Ω	0.000 A	5	0				
12	0 Ω	0.000 A	5	0				
13	0 Ω	0.000 A	5	0				
14	0 Ω	0.000 A	5	0				
15	0 Ω	0.000 A	5	0				
16	0 Ω	0.000 A	5	0				
17	0 Ω	0.000 A	5	0				
18	0 Ω	0.000 A	5	0				
19	0 Ω	0.000 A	5	0				
20	0 Ω	0.000 A	5	0				
21	0 Ω	0.000 A	5	0				
22	0 Ω	0.000 A	5	0				
23	0 Ω	0.000 A	5	0				
24	0 Ω	0.000 A	5	0				
25	0 Ω	0.000 A	5	0				
26	0 Ω	0.000 A	5	0				
27	0 Ω	0.000 A	5	0				
28	0 Ω	0.000 A	5	0				
29	0 Ω	0.000 A	5	0				
30	0 Ω	0.000 A	5	0				
31	0 Ω	0.000 A	5	0				
32	0 Ω	0.000 A	5	0				
33	0 Ω	0.000 A	5	0				
34	0 Ω	0.000 A	5	0				
35	0 Ω	0.000 A	5	0				
36	0 Ω	0.000 A	5	0				



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VUS Version 2.x Software Manual • Revision 1 • November 12, 2013 • TA